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The impact of a wet year on fruit quality

Maximising future orchard performance
Alternative insect pest control methods

THE OFFICIAL MAGAZINE FOR APPLE, PEAR AND SUMMERFRUIT GROWERS IN AUSTRALIA

Australian Fruitgrower
Australian Apple and Pear Ltd (APAL) and Summerfruit Australia Ltd (SAL) are the peak industry bodies representing the interests of commercial apple, pear and Summerfruit growers in Australia in matters of national importance including regulation, legislation, marketing, research and development.

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Cover photograph submissions should preferably be digital taken at a resolution greater than 300 dpi. Web resolution images and colour prints (unless exceptional) are not of sufficient quality for full colour printing. Colour transparencies are also acceptable.

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Editorial

Floods, cyclones, bushfires, and now major earthquakes in our neighbourhood. Is there to be any respite from this series of "hits" which have affected our families, communities, economies and outlooks – even where we were not impacted directly? No doubt there will be some insurance "hits" turn up on the radar as well as well as the usual searches for someone to carry the legal liability with the further potential to compound "compliance".

So it was a real pleasure to read the incoming state reports this month with frequent references to good quality fruit and improvements in grower returns. Admittedly these trends were not right across the board but widespread nevertheless. For much of the country (WA being a notable exclusion) the report in this issue from Dr Gordon Brown and DPI Victoria's Robert Holmes about what has happened to our trees during recent waterlogging and high humidity, and how to best recover from these situations, will therefore be most timely.

Perhaps the positive reports will also encourage growers to take even more note of the latest article from AgFirst's John Wilton who takes a forward-looking stance and is already considering next season.

With the arrival of the first imported apples this new challenge has quickly risen to the top of the agenda. Initial reports are encouraging, with consumers and many retailers expressing preferences and support for local fruit. However the challenge is here now, it is real, and the need to prove to our customers that our fruit and our supply capabilities are worthy of being the buyers' first choice and preference is as strong as ever. Australian Fruitgrower will continue to focus on providing industry with the information that supports that thrust. We can still compete while offering our support for those impacted by recent events – including our friends across the Tasman.

Cheers
John Fitzsimmons

John Fitzsimmons
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Technical Editor SAL

Dr Gordon Brown
Technical Editor APAL

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table of contents

Our cover:
Jonathan apples at Witchell's at Labertouche, Victoria. The trees are planted at 3.5 x 1 metre, giving 2857 trees a hectare. They have been sprayed with Parasol.

Don't you just love a sunburnt country, a land of flooding rains...?

No doubt everyone has experienced some degree of hardship this season and what a season it turned out to be. Mother Nature dished up everything in some form or other across the country and then the alleged accidental bushfires that ravaged the Perth districts, thoughts are with you. The consumer market has been pressured by unseasonal fruit quality and claims of volume shortages, and then alleged price gouging. Oh! What a year.

What's the bright side? A replenished watertable on the eastern seaboard and the jury is still out on the APVMA (dimethoate and fenthion) review. It is now apparent that a preliminary decision is not forthcoming until mid-year. This is due to the workload of the APVMA and the requirement to comprehensively review of all data pertaining to the average daily intake and its relationship to dietary calculations for humans. SAL, with technical expertise from qualified accredited members of the Australian Horticultural Exporters Association (AHEA), is questioning the number of product lines on the label able to use each of the chemicals, dimethoate and fenthion. Some product lines already have alternatives available and some don't. In order to reduce the competition for 'space on the plate of consumption', the product lines that don't "need" dimethoate and fenthion should be removed from the label. The APVMA should then carry out its review of the remaining chemical use patterns. This will improve the accuracy of the APVMA's review and potentially includes chemical use in some areas that don't have alternatives that would otherwise be incorrectly/inappropriately removed from use by the APVMA's current assumption.

It is not the first time this rationale has been proposed. It has again been recently mooted to the appropriate authorities for a greater 'whole of industries' workshop to be convened, to examine these usage levels and determine some clarity of current usage patterns or more simply put, reduce the residue crowding of the consumer plate. Queensland fruit fly has virtually shut down Victoria and neighbouring areas of NSW with more than 20 declared outbreaks registered in early February and increasing.

It's ironic that the DPI Victoria is using dimethoate to bring areas under control and here is a national review process that may lead to curtailment of an important weapon in the producers' arsenal to control this endemic pest. Also, let's not forget Med. fly. With the potential for serious interruptions to trade and fruit movements - both interstate and globally - it must really be asked somewhere whether both the left and right hands know of the economic predicament of the producers who have been tasked with feeding a bourgeoning nation.

A current SAL/HAL project is underway to conduct sequential 14 day 3°C verification trials on plums. The 2008-09 trial was unsuccessful as most of you know. The trial will use protocols previously agreed to between Biosecurity Australia and the Taiwanese quarantine authority, BAPHIQ. A Taiwanese inspector will be present for the duration of the trial. May I take this opportunity to thank the few producers who have helped source suitable fruit for this exercise.

John Moore
CEO Summerfruit Australia Ltd. ■

APAL Chair's Report

The challenge for consumers.

Fresh apples from China have now been here for over a month and, while they have not had a big impact on the market, the big question is "how many more are on the way?"

We are aware that AQIS inspectors spent some time in China around the Christmas period and inspected some 1580 tonnes of fresh apples for Australia. So if my assumptions are correct this equates to about 65 40-foot containers. At the time of writing we are aware of about 22 containers arriving, which means there are another 43 on the way somewhere.

As mentioned previously there has been difficulty selling the fruit when there is virtually no Australian fruit on the market. Now there are fresh season Australian apples on the shelves it makes you wonder who is going to find a home for the rest of the Chinese shipments. As an industry, it will be worth keeping up the pressure on the retail sector to ensure that Australian consumers are aware of what is in front of them and help them to make an informed choice.

Appealing to Australian consumers to "buy Australian" is not new and is not confined to the fruit and vegetable industry. Recently I came across an amusing old R.M. Williams advertisement (in the form of a poem) in the Sydney Morning Herald's Good Weekend magazine from the early 1990s that stated: "Australian boots should be Australian made!"

The message was:
They make our running shoes in countries where you've barely room to walk, and they say that it's designed to increase trade. They make our boomerangs in China and umbrellas in Tibet. But Australian boots should be Australian made.

They make our cricket bats in Pakistan, computers in Taiwan. Some day they'll make pavlovas in Nepal. The French make love, they reckon, like no other race on earth, and the Poms don't make very much at all.

But it's when you're on a stock horse, in the heat and dust and dirt, and you know that you're a five-day ride from town. You're depending on the boots you wear to last through thick and thin. You have to know those boots won't let you down.

And you hope the bloke who made them made real sure that not one stitch will tear, come loose or somehow get all frayed. That's the time you won't begrudge the fact that you paid a little more for Australian boots, that are Australian made.

The result of this campaign about 20 years ago must have been successful because while most of Australia's other boot manufacturers are now making their products offshore, R.M. Williams is still making its boots in South Australia and still enjoys a high level of success in the marketplace. Over the years the company has worked hard on quality and on ensuring that it responds to the needs of its customers. The advertisement above was part of a series that also made some comments on society as well as the political reasons being used at the time to develop international trade

Now all we need is for Australian apple buyers to continue to support our industry so, like R.M. Williams, our growers can enjoy the success they deserve. ■

Letter to the Prime Minister

After the recent address to the New Zealand Parliament by Prime Minister Julia Gillard, where she made references to New Zealand apple imports, many growers contacted me expressing their disappointment and dismay at the Prime Minister's comments.

During the address the Prime Minister said that Australia "accepts the verdict of the global umpire" and will implement the WTO rulings on the importation of New Zealand apples into Australia.

While this was a re-statement of what was known in November last year, many Australian apple growers were concerned about the context of the PM's message.

I wrote to the Prime Minister and said that the Australian apple industry has for many years been preparing itself for the time when apples will be imported from China, New Zealand and the US, and has gone through much change to ensure it is competitive with imported fruit. Much of this preparation has been funded by growers' own money with some support from the Australian Government.

I pointed out that Biosecurity Australia is currently conducting an Import Risk Assessment for New Zealand apples and sought the Prime Minister's assurance that all necessary steps will be taken to protect the Australian industry if fire blight is found on imported apples.

I expressed my hope that the Prime Minister understood the concerns of apple and pear growers in regard to this matter as the livelihood of many families is at stake.

Management change at AFFCO


Andrew Dick

AFFCO (The Australian Fresh Fruit Company Pty Ltd) has serviced the needs of its members for over 15 years however, like all organisations, it has to deal with change.

After serving AFFCO as its General Manager since its inception, Andrew Dick has decided that the time has come for him to pursue new interests and he concluded his full time roll at the end of February 2011.

AFFCO Chair Max Scales said, "The Board of AFFCO, and especially I as its Chair, has worked closely with Andrew over the last months to effect this smooth transition. We will manage the period ahead of us carefully and in order to protect the business's integrity in the transition period and to preserve as much of the intellectual property as we can. Andrew will continue to manage the Well Informed Grower project and continue with the development of the AFFCO Profit Planner™. Andrew has been an outstanding contributor to AFFCO and I know that you will want to join me in wishing him every success in his exciting new venture."

A decision as to a replacement for Andrew will be made in due course. In the interim Sally Piper will report directly to AFFCO's Chair and take on additionally duties to manage the business and service our members.

Council of Leaders

The organisation has also created a Council of Leaders whose role will be to "assist the AFFCO Board and management in its direction and value proposition". Seven inaugural members of this Council have been announced:

Scott Montague (Montague Fresh)
Jon Durham (APAL)
Ian Muir (EE Muir & Sons)
Mark Joyce (Joyson Orchards)
Michael Cox (Lenswood Co-operative)
Rob Cathels (N&A Group) and
Max Scales

AFFCO Board

AFFCO's Chair Max Scales said the organisation is delighted to announce that Rob Cathels from the N&A Group in NSW has joined the AFFCO Board. "Rob is a leading industry identity and he will be able to help shape our decisionmaking and Board processes very effectively and his opinions will be welcomed" Chair Max Scales explained, "From time to time new members will be co-opted to ensure that our voice is a strong one and fully representative of all sectors. The Council will meet at least quarterly or as required and these meetings will be face-to-face to ensure maximum effectiveness. In summary, he said "AFFCO is in extremely good hands, and when the time is right our new General Manager will be charged with the responsibility to take the business into the next 15 years. The Board and the Council of Leaders are some of the best names in the industry and they are well positioned to ensure that we deliver on our promises. Most importantly they are very positive and determined to ensure that our value proposition is clear and measurable."
Contact: AFFCO, w: www.affco.com.au; t: (03) 5420 7444 ■

Young guns line up for 2011 AFFCO Young Leaders Retreat

AFFCO has announced that the AFFCO Young Leaders Retreat will take place from 25 to 27 May 2011 in Lancefield, Victoria. The network is calling on all potential leaders in the industry together with past retreat graduates to check out the exciting new program on 'its website *(www.affco.com.au)* and register. Following the success of its Retreat in 2010, AFFCO has worked on improving the program even more and provided a number of changes. This year, the Young Leaders Retreat will run two concurrent courses:

1) **Young Leaders Retreat** for applicants aged 20 to 35 years. This will include topics such as leadership, business management, strategy, OHS, horticultural law, team building and will also introduce public speaking.
2) **Graduate Leadership Program:** This program is aimed specifically for the graduates from the 2010 Retreat plus industry leaders aged 35 years-plus. Topics will be built on the learnings from the previous year and will be an opportunity to touch base with past graduates, network and more importantly delve deeply into topics such as leadership, strategic thinking, finance and business management.

The AFFCO Retreat is a successful program designed for participants to take up the challenge to develop leadership and business management skills in a unique environment with likeminded industry colleagues. Over two and a half days participants are involved in lectures, in depth case studies, workshops and group discussions with highly qualified and respected guest presenters. The retreat is fully residential including all meals and accommodation and participants are required to stay onsite for the duration of the program. Limited places are available to provide an open trusting learning platform. Held at Cleveland Winery in Lancefield, all participants will once again experience the uniqueness and personal growth that takes place when these topics are explored in a residential retreat style program.

"The AFFCO 2010 Young Members Retreat was perfect" said Darlene Fankhauser from Fankhauser Orchards in Drouin. "Just being given the opportunity to meet with other people of your age who are in the same situation is fantastic plus you gain more information and find out other ways of going about certain tasks in your business".

Lucinda Giblett from Newton Bros. Orchard in Western Australia agreed. "It surprised my expectations – we can't underestimate the positive reassurance this course will have in years to come on so many levels – personal, career and industry." Horticultural Australia Limited (HAL) has also recognised the need to focus on the training and skills of young people in the industry through its sponsorship of this program.

The AFFCO Young Leaders Retreat Program and registration details are currently available online from www.affco.com.au. More information: Contact Sally Piper t: (03) 5420 7444; e: sallyp@affco.com.au ■

APAL fronts Senate inquiry - confusion in media

APAL's Industry Services Manager, Annie Farrow, appeared before the Senate Rural Affairs and Transport Reference Committee inquiry into biosecurity and quarantine arrangements for apples and pears.

The meeting was held in Canberra on 14 February. APAL's appearance follows a submission made to the inquiry in August 2010. A media report on the Senate hearing claimed that APAL was seeking $40 million to develop a fire blight test. The report then quoted a spokesman from Riverina Citrus. The confusion stemmed from AAP (Australian Associated Press) misrepresenting what was said at the Senate hearing.

Annie said APAL was disappointed the government declined to put $40 million into the CRC for Plant Biosecurity as it was a critical research organisation supporting cropping and horticultural industries in Australia. As an example, Annie said the CRC for Plant Biosecurity was working on a diagnostic test for fire blight and this was important as Australians do not have any experience with the disease should it enter the country. The apple and pear and citrus industries appeared together at the hearing. ■

Chinese apples

Chinese apple imports continued into February bringing the total to 24 containers or approximately 530 tonnes of fruit by the middle of the month.

APAL was advised that, when the original inspection was conducted in China over the Christmas-New Year period, a total of 1,580 tonnes of apples were inspected and cleared. However, even though the apples were cleared by AQIS, that does not necessarily mean they will be sent to Australia. The Chinese exporters were free to divert those cleared apples to any other market they wished to supply. APAL arranged for its own testing of two samples of Chinese apples for pesticides residues and heavy metals. The results were not available at the time of printing.

Meanwhile, the industry continued to get media coverage in New South Wales with the discovery that the hospital in Orange (NSW) was providing Chinese apples to patients as part of their meals. When contacted, NSW Health blamed poor growing conditions and flooding for the temporary supply of Chinese apples to the state's hospital patients.

Nashdale (NSW) orchardist and NSW Farmers Association vice president, Peter Darley, said "It was not a good excuse for NSW Health to use, in fact it was quite embarrassing, given that our industry has not been widely impacted by the heavy rains and floods." NSW Health is quoted as saying they are now sourcing new season's Australian apples. ■

Future Orchards – fruit size development

The business development program within the Future Orchards project has been collating regular fruit size development information and the information is available on the levy payers section of the APAL website (www.apal.org.au).

This valuable information shows data for 'Gala' and Pink Lady apples at a number of locations. The early February report for 'Gala' stated: *Early district crops are now at the harvest stage. The earlier blocks are showing fruit sizing ahead of size trend lines, indicating that fruit size is either going to be rather large, or the size trend lines need adjustment to accommodate the shorter growing period between flowering and harvest, or both.* An explanation of how the data can be used is also available on the levy payers site. If you do not know your username and password, please contact Stuart Gray via email (cm@apal.org.au) and your login details will be sent to you. ■

Meeting with Victorian Minister for Agriculture

APAL Managing Director Jon Durham met with the new Victorian Minister for Agriculture and Food Security and Minister for Water, Peter Walsh, to discuss a range of issues and key initiatives in the apple and pear industry. About 40 per cent of Australia's apples and about 90 per cent of Australia's pears are grown in Victoria. Peter Walsh is a former President of Victorian Farmers Federation (VFF) so has a strong affinity with agriculture in Victoria. Jon said he had a constructive and positive conversation with the Minister. Some of the topics discussed included country of origin labeling, water issues and the Murray-Darling Basin, planning regulations that are starting to restrict activities on orchards, and the Victorian pear breeding program. ■

New Zealand apples

In February, New Zealand apple imports hit the headlines after the Prime Minister Julia Gillard told the New Zealand Parliament that Australia accepted the WTO ruling on apples from New Zealand. APAL's response was that the industry was aware in November 2010 that New Zealand apples could be imported in 2012 after the WTO rejected Australia's objection to its finding in the case.

Biosecurity Australia is reviewing the IRA for apples from New Zealand and will be provide it to the Australian industry and NZ for review when the draft is completed near the end of March. APAL will have 60 days to review the document. The final protocols are expected by July/August. However, the industry is still concerned about how fire blight is managed within the protocols and will be closely examine the proposed recommendations during the review period. APAL sent a letter to the Prime Minister expressing the feeling of dismay and betrayal her comments have caused many growers. ■

New season apples launched to media

Food editors from 10 influential Australian magazines, including *Australian Women's Weekly, Woman's Day, New Idea, Better Homes and Gardens and Australian House and Garden* were treated to a 'learn about apples' day at Montague Orchards at Narre Warren, Vic. late last month.

The event was organised by Apple Marketing Manager at HAL - Luke Westley - and Bite Communications.

The food editors, all women, were given a brief history of the Montague operation and then saw a demonstration of testing apples for maturity and given an explanation of how apples are selected for immediate sale or for storage.

They were able to taste 'Gala' apples directly from the tree, which proved to be a feature of the day.

The women were given apples taken directly from a CA store which demonstrated to them the quality of apples properly stored. All dishes in the three course lunch featured apple and

Rowan Little of Montague Fresh explaining maturity testing to food editors of Australian magazines.

talks over lunch were given by Scott Montague and dietician Karen Kingham. The event was a very positive experience for the food editors who now have a greater appreciation for the skills and passion of Australian apple and pear growers. ■

Fruit Logistica

APAL Chair Darral Ashton and General Manger Jon Durham recently attended Fruit Logistica in Berlin.

Jon said it was one of the best he has attended with a huge range of displays and many quality information sessions. He was particularly pleased with the Pink Lady™ presence.

"Pink Lady Europe created a more sophisticated and elegant display in a busier space at the fair. There was a lot of traffic through the venue with many licensees and retailers visiting the stall.

"There was a lot of competition in the apple category with many trying to establish 'club' varieties"

"Pink Lady is still ahead of the game and there are a lot of varieties that are trying to establish the recognition and professional support that we have developed for Pink Lady."

Nominations Sought for APAL Company Director - NSW

Apple & Pear Australia Limited (APAL) in co-operation with NSW Farmers Association is seeking nominations from Class A Members of APAL who are interested in being a Director on the Board of APAL representing the State of NSW.

In addition to serving as a Company Director of APAL the successful candidate would also be put forward to Horticulture Australia Ltd to be accepted as a member of its Apple and Pear Industry Advisory Committee.

Director Nomination Forms can be obtained from NSW Farmers Association by phoning [02] 8251 1700.

Nominations must be submitted by no later than Friday 27 May 2011. Enquiries -

NSW Farmers Association [02] 8251 1700
Apple & Pear Australia Ltd [03] 9329 3511

Growing the Business of Farming | NSW Farmers Association

Apple & Pear Australia Ltd.

Nominations Sought for APAL Company Director - Victoria

Apple & Pear Australia Limited (APAL) in co-operation with Fruit Growers Victoria is seeking nominations from Class A Members of APAL who are interested in being a Director on the Board of APAL representing the State of Victoria.

In addition to serving as a Company Director of APAL the successful candidate would also be put forward to Horticulture Australia Ltd to be accepted as a member of its Apple and Pear Industry Advisory Committee.

Director Nomination Forms can be obtained from Fruit Growers Victoria by phoning [03] 5825 3700.

Nominations must be submitted by no later than Friday 27 May 2011. Enquiries -

Fruit Growers Victoria [03] 5825 3700
Apple & Pear Australia Ltd [03] 9329 3511

Fruit Growers Victoria

Apple & Pear Australia Ltd.

Victoria

Fruit quality is good, with fruit colour being especially good

The 'Williams' pear and 'Gala' apple harvest has commenced in Victoria, with most growers reporting yields to be on-estimate. Fruit quality is good, with fruit colour being especially good. As a consequence market prices are good and growers have been strongly urged to maintain the high quality and not be tempted to send immature, damaged, or over-ripe fruit.

Rain has hampered harvest slightly but unlike soft fruits the pome fruit crop is largely unaffected. However the warm and humid conditions have favoured the development and life cycle of Queensland fruit fly. An outbreak was declared in Shepparton in early February when single flies were found in two traps in suburban backyards in north Shepparton.

No fruit flies have been found in commercial orchards. This is a costly nuisance for growers who now find themselves in the 15 kilometre restriction zone as they must now cold treat or fumigate before shipment. With the harvest underway pear promotion is in full swing in Victoria. The first event was The Age Harvest Picnic at Hanging Rock late last month.
The Fruit Growers Victoria display featured 'pair the pear' tastings, pear recipe demonstrations, peeling competitions, and a roving pear mascot. Pears were also featured in the VIP marquee, the NEFF cooking marquee and in the Lush Desserts Pears St Helene recipe kit. Other events include the Melbourne and Food Wine Festival, Foodie Family Day at Federation Square; a Pear Day at GO TAFE, featuring a Ready Steady Cook format show with celebrity chef Janelle Bloom and Lucy from Junior Masterchef, Queen Victoria Market, and pear cooking classes.

On 11 February the Goulburn Valley apple and pear industry heard that Charles Turnbull passed away at the grand age of 98 years. The Turnbull family is a dynasty of fruit growing at Ardmona that has served the industry well. Charles is succeeded by Ross, Donald and Bruce. Current industry members Alex, Chris (FGVL Director) and Philip (APAL Director) are grandsons.

John Wilson
Fruit growers Victoria ■

South Australia

Fruit...is of very good quality after cooler than average weather and good summer rains

Harvest is upon us with apples and pears from the Riverland starting to roll through the packing houses and onto the market. Fruit from this region is of very good quality after cooler than average weather and good summer rains. Initial sales of 'Gala' apples and 'Duchess' (WBC) pears have been strong and at good prices.

In the Adelaide Hills the 'Gala' harvest was expected to start during the week beginning 21 February and, again, quality looks exceptionally good. With no lengthy hot periods so far we expect good keeping fruit with little or no sunburn.

The first Chinese apples hit the shelves of a number of small fruit sellers last month. The appearance of this fruit generated quite a bit negative publicity for imports and many calls for "buying local" from the SA public. We hope that consumers will continue to strongly support our local product and sellers (even small outlets) maintain correct labelling to ensure choice for those consumers.

Unfortunately, these apples arrived when local stocks were thinning down, giving many greengrocers a "legitimate" and arguable reason for stocking.

On 16 February the Lenswood and Forest Range Ag Bureau conducted a field walk through the orchards of Michael and Damon Nicol at Uraidla. A group of 25 growers viewed new plantings of both Fiero Fuji and Alvina Gala on M26 and M9 combinations.

Michael and Damon were pretty happy with both these varieties so far. The *Fiero* Fuji is a early type and they expect to be harvesting it as soon as a couple of weeks after they start Gala.

On the day growers were closely followed by a film crew from Channel 7, who were seeking comment after our PM's controversial speech to the New Zealand Parliament. I imagine the quotable quotes were all censored out!

APGA of SA will be putting in a submission to the Adelaide Hills Council Development Plan on Environmental Covers (permanent hail and bird netting structures). This plan has recognised the high scenic value (and tourism value) in the landscape of the Adelaide Hills as it is, and seeks to minimise the visual impact of brightly-coloured net structures. The Council has indicated strong support to growers, but there is some concern that growers along designated tourist routes will be quite disadvantaged by such a plan. Our submission will be based around the increasing necessity of these structures due to our changing climate, and that a pragmatic approach needs to be taken in planning applications, addressing individual needs, topography, crop requirements, etc.

All the best to our growers here and Australia-wide for the coming season,

Greg Cramond
APGA of SA ■

Tasmania

The program and registrations are now available for the 2011 FGT annual May conference (13-15 May). Copies have been distributed to growers and to state organisations and are available on FGT's website (www.fruit-growerstas. com.au). The theme of the conference is 'Facing the Challenges...Finding the Answers' and will feature a mixture of local, national and international presenters including David Geen (Jealous Fruits, British Colombia, Canada) and Ingrid Hoffman (Le Fresh International, New Zealand).

This year's conference will address some of the many issues the perennial fruit industry has raised as priorities over the last year.

Warmer conditions and lots of sunshine during February has been beneficial for the apple crop

Morning sessions on Friday 13 May will include a berry program. The dinner on Saturday 14 May will include two Tasmanian industry award presentations. Wrest Point Casino is the venue (situated in Sandy Bay, only five minutes from the Hobart city centre. A range of accommodation options are available at Wrest Point as well as surrounding hotels, B&Bs and motor inns.

Amcor is the Platinum sponsor for this year's conference and once again FGT has the support of a number of other generous sponsors as you will see from the conference program brochure. Tasmanian growers have been pleased to be experiencing slightly warmer conditions and lots of sunshine during mid February which has been beneficial for the apple crop.
MRL testing for apples and pears commenced on Monday 21 February and a pre-season pome fruit seminar was held on Thursday 24 February at the FGT office where Luke Westley from Horticulture Australia Ltd (HAL) presented the 2011 Apple and Pear national marketing campaign.

Sally Tennant
Fruit Growers Tasmania ■

Western Australia

The past month has delivered 'more of the same' for Western Australia with the heat continuing to bring picking times forward by a good two weeks on last year's dates. The continued drought conditions are becoming a great concern with dams well below what they should be and many growers having to resort to using neighbour's excess (if available), increased thinning or simply deciding which blocks they will leave to the elements and hope for the best.

A better outcome for growers with the Department of Water is something the entire Western Australian horticulture industry feels strongly about and will continue to negotiate on until a favourable outcome is reached.
Western Australia is dealing with its first wave of imports, however not from the Chinese.
For the first time South Australian Galas were in the WA market. WA growers are slightly concerned however, that the SA apples are using methyl bromide as a fumigant for codling moth, in light of the complete EU ban and its prohibition from being used as a soil treatment. The initial results from a Gala maturity testing information gathering exercise are concerning, and industry will be working to ensure that growers lift their game and only deliver premium quality fruit to their fruit eating consumers.

More research is needed to determine what size our eating consumers want

The stone fruit industry in the South West is busy picking 'Tegan Blue' plums at the moment and the quality looks sensational. The only disappointment is the huge number of undersize fruit thanks to the dry conditions. When the quality is at such a premium it seems a shame to leave the fruit on the tree to rot. Such extreme wastage has Fruit West asking who determines the current size restrictions on growers? Are the sizes determined as a result of retailer or eating consumer preference? Perhaps more research is needed to determine what size our eating consumers want and then some quality standards may need to be adjusted accordingly.

The Department of Agriculture and Food in WA recently conducted a tasting session for new early season plum varieties, which has WA industry excited about the possibilities. DAFWA staff have been working to bring some much-needed variety to the WA stone fruit market, which is appreciated by industry.

Tasting of later varieties will take place in mid-March and Fruit West is urging growers to get involved and provide their opinion which could ultimately shape the future of the stone fruit industry in WA.

Amy Green
Fruit West ■

Queensland

The Stanthorpe Show was a success again this year thanks to a great team of volunteers who gave up their time for the show. We would also like to formally thank David Paskins for supplying all the Sundowner™ and 'Granny Smith' apples to create the fantastic display that was awarded third prize! Our Special thanks also go to:
Mr I. Jackson, Mr F. Watson, Mr T. Butler, Mr T. Dempster, Mrs M. Butler and Mr A. Butler.

Planning is already underway for this year's activities including the Apple and Grape Festival 2012 and other various promotional activities. Queensland can look forward to more reasonable apple prices with the arrival of this season's Stanthorpe Galas. The quality is said to be good and is in strong supply, which is a welcome relief given this year's fluctuating weather conditions – where not only the devastating Queensland floods left produce shelves bare but the previous drought which drove apple prices as high as $60/12kg box and produced a shortened shelf life. However that should all change in the next two weeks, with the new season Galas from Stanthorpe expected to bring an estimated $36 to $40/12kg box.

Quality is good and in strong supply

Michael Cowan
Growcom ■

Continued over...

New South Wales

I get the feeling that once again we are standing on the financial precipice, hoping that the new season's prices will hold; or shall we tumble into the dark hole that growers are renowned to expose on frequent occasions?

Prospects look very encouraging at present with excellent crops in all NSW regions.

Prospects look very encouraging with excellent crops in all regions

The recent rain has helped to boost size and colour with maturity being a good 14 days behind last year.

The extremely high prices for red fruit experienced at the end of last year and early this one have been forced back very quickly as new season supplies have become available.

Once again growers are competing against grower which allows retailers to bring the prices down. The initial consignment of Chinese 'Fuji' has now been in the market for three weeks and the industry blitz has certainly made most people aware of the imports and consumer support for the Australian product has been very encouraging. Consumer reaction is a little more encouraging than the Prime Minister's flippant treatment of the Australian industry during her recent trip to New Zealand.

Well I am off to throw a few more dollars into the black hole – so that's it until next month.

David Gartrell ■

InfoStone – an important tool for your industry

By Vanessa Wight, Summerfruit IDO

With the season wrapping up, and after some very extreme weather events, it is more important than ever that businesses have up-to-date industry information for future planning. We are requesting all stonefruit growers to enter their end of season data into InfoStone, the stonefruit industry's new national online data collection system. If you have already entered your data then it's also a good opportunity to update it if needed.

InfoStone has been developed with the intention to gain an industry-wide picture of plantings, yield and related harvest time. To do this, data on fruit type, tree age, number of trees, and current and potential volumes of production need to be collected. Collected data will be aggregated in reports and those aggregated reports will be available to contributors - this ensures that individual data is protected and those that contribute are rewarded. Experience from other industries tells us that the information these types of reports provide is invaluable and helps individual businesses and the industry to make better informed management and marketing decisions, and ultimately increase profitability. This is particularly true in times when external forces, such as recent weather events, have had an impact on both short and long term production and decisions need to be made by growers as to what and when to re-plant.

Growers will be in a better position to determine which fruit types may be in oversupply in years to come and therefore need to be removed, and perhaps more relevant under current circumstances for which fruit types additional volumes are required. At an industry level, planting and volume data will be used to develop more effective marketing campaign for the domestic market and remaining export markets.

So that the industry can have confidence in the data generated it is imperative that as many stonefruit growers as possible enter accurate data and update it on an annual basis. The more accurate and comprehensive the individual data which is supplied, the more accurate the aggregated industry reports will be. To the growers and their families who have suffered loss or damage associated with the recent weather events, our thoughts are with you. To assist in future planning we urge you to enter your end of season data into InfoStone. We also urge you to visit the Horticulture Industry Network (HIN) website (www.hin.com.au/sal) and fill in a short 'Online flood loss and damage assessment form'. Collating information relating to factors influencing productivity - and in this instance the extreme weather events over the past weeks - will allow services and information to be delivered directly to those growers affected. HIN can also refer your needs to those who can assist you and the information provided will help government and industry groups plan longer term recovery programs.

If you have not received an email or letter about InfoStone and would like more information and/or assistance in accessing the InfoStone system and contributing data please contact: Vanessa Wight, Industry Development Officer – Victoria, m: 0447 511 344; e: ido@summerfruit.com.au ■

Growing Your Market: Maximising orchard performance next year and beyond

By John Wilton, Deciduous Fruit Specialist, AgFirst

This year's crop is well on the way through harvest with early and mid-season varieties largely off the tree and into storage. Later varieties such as 'Fuji', Pink Lady™, 'Granny Smith' and Sundowner™ are still to be picked in most districts. It is now time to turn our attention to planning and setting up the orchard for the future.

One of the keys to growing your market is continuity of supply and, if you are successfully growing the market, expanding production to keep pace with the growth of the market is essential.

The postharvest period is a critical time in the orchard for setting up next year's crop, as well as preparing for longer term developments necessary to maintain the orchard business as a viable sustainable enterprise.

Appraise orchard performance

A good starting point for the future is to appraise this season's performance. For many pome fruit producing districts the 2010-11 season has been very different to recent years due to the high rainfall over the growing season and the affects this will have had on tree and crop behaviour. Growing season effects are likely to have been:

- excessive tree vigour
- elevated wet weather disease incidence
- soil drainage problems
- vigorous weed growth
- soil nutrient depletion

A proactive approach to these issues now will benefit next year's orchard performance.

Excessive tree vigour

It will have been a great year to get new plantings established, but mature cropping blocks can make excessive shoot growth when there is plenty of soil moisture around to the detriment of fruit quality and future crops.

Mature cropping trees only need to have annual shoot extension growth of 20 to 30 centimetres. Strong growth, in excess of around 50cm annual extension growth, particularly if there are large numbers of these vigorous annual shoots, makes it very difficult to manage the fruiting canopy in regard to maintaining adequate light in the fruit bearing zones, which need at least 50 per cent of ambient light to produce quality fruit.

Figure 1. *These black spot lesions have been suppressed, but not killed by DMI reach back fungicides. In the autumn or over the winter they will re-activate and produce spores to cause new infection.*

Experience we have had with high tree vigour is that the effects often carry over into the following growing season, due to the development of a larger root system which in turn drives vigour the following season. The library section on the Future Orchards 2012 website (click through www.apal.org.au) has several items on vigour management. One worth looking up is *Vigour Management*" by John Wilton and Ross Wilson in September 2009.

In mature fruiting trees, excess vigour is often associated with particular branches that have become unbalanced due to having been shortened back. This destroys their vegative cropping balance so they burst into growth rather than fruit. Our observations and study of branch behaviour, both here and in South America, suggest that once branch diameter measured five to 10cm out from the trunk, or main branch exceeds 3cm per metre of branch length, the branch is becoming excessively vigorous and needs to be completely removed.

With early and mid-season fruiting varieties, taking out these excessively strong branches immediately after harvest helps to reduce tree vigour and opens up better light penetration into the weaker more fruitful branches that remain, to improve their bud quality for next season.

Elevated wet weather disease incidence

Wet growing seasons present a challenge when it comes to scab (*Venturia* spp) control. Even though there may not have been much noticeable scab infection in the fruit, this does not necessarily mean the orchard does not have high potential disease carryover.

Many of our modern kickback fungicides do not completely kill the leaf infection, they just suppress it's ability to produce spores, then later, either post harvest if conditions are conducive to infection, or over winter these lesions become active again to produce ascor-spores and start next year's infection.

- Leaf fall urea sprays at 5kg/100l to hasten leaf decay are good insurance. Incidentally urea at this concentration also has a direct effect on the ability of the fungus to sporilate.

Phytophthora root rots are the other wet weather disease likely to cause problems, following a wet growing season. Vulnerable rootstocks particularly MM106, which is widely planted in Australia, are very susceptible to infection. More tolerant rootstocks, even M26 and M9 can succumb to the disease if conditions for it are very favourable. While MM106 usually dies in one season, more tolerant rootstocks often take several years to die.

Post-harvest sprays of *pPhosphorous* acid are good insurance against Phytophthora root rots. Provided the root rot is caught in its early stages of development, there is a good chance of a successful cure with phosphorous acid sprays.

Soil drainage

With the exception of pears, fruit trees do not like their roots being waterlogged. A wet growing season will show up any drainage problems, so check out the orchard carefully for signs of poor drainage. Post harvest is the best time to do drainage work.

Where impervious pans exist in the soil profile, deep ripping when the soil is at its driest gives a better result than at other times due to the soil shattering more readily when dry.

A word of caution however, sometimes the soil pan is holding the water table down and in these situations deep ripping may make the situation worse, unless the poor drainage problem beneath the pan has been addressed.

Vigorous weed growth

Where weed growth has become a problem, application of herbicides post harvest may be beneficial, particularly where difficult to control weed species are becoming established.

Soil nutrients

Wet growing seasons, particularly in orchards planted on relatively free draining soils, usually lead to lower nutrient availability due to leaching of soluble nutrients such as nitrates.

Where there has been strong vegetative growth nutrient dilution occurs, so tissue nutrient levels can be lower than in a normal growing season.

Figure 2. *Soil water logging in the spring killed these trees.*

There is good data, particularly for nitrogen, to show that buds with high nutrient reserves are more likely to set fruit than deficient buds.

Where crops were heavier than normal pre-leaf fall foliar nutrient sprays to build up bud reserves will help set next season's crop.

Modest soil nutrient application prior to dormancy setting in, is also advisable. The Future Orchards 2010 website has an excellent paper *Orchard Nutrition, June 2009* by Kevin Manning, that discusses orchard nutrition.

Figure 2. *These Fuji had low spring nitrogen levels and failed to set fruit.*

New plantings

Ongoing orchard businesses need to have a good long term orchard renewal program together with a strategic plan of when re-development will be done.

Trees need to be ordered several years in advance to insure that high quality planting materiel is available when it is required. Producing a new tree from scratch takes about two to three years.

In the spring of Year 1, the rootstock cutting is established, budded to the chosen variety the following autumn, grown on in the nursery in the following year and is ready to be trans-planted into the new orchard block sometime during the second winter.

New pipfruit trees tend to perform much better on land which has been in crops other then pipfruit, or land which has been out of pipfruit for a few years. This is due to specific replant diseases (SRD) which built up while the land was in the previous pipfruit orchard.

Finding new land to plant is not an option for most pipfruit growers so it is necessary to replant their old orchard land. With thorough preparation it is possible to successfully establish new pipfruit orchards on replant sites.

Preparation needs to begin as soon as the crop is off the existing orchard, by pulling the trees. If the trees are pulled well before leaf fall transpiration from their attached leaves dries

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Growing Your Market: Maximising orchard performance next year and beyond

By John Wilton, Deciduous Fruit Specialist, AgFirst

out the wood, enabling a cleaner burn later on. The site then needs to be cultivated and raked with a tyned cultivator to drag up as many of the old roots as possible, so these can be removed.

Ideally, a minimum 12 month fallow between pulling out the old orchard and planting the new orchard is desirable, but not always possible.

Established infrastructure such as irrigation or hail net structures often impose limitations on orchard design in regard to between row spacings for new plantings and if accommodated can lock the new planting into an obsolete orchard design. Careful analysis of the pros and cons of removing this infrastructure needs to be carried out to establish whether or not it is best to retain the established infrastructure and its limitations for the new planting.

The Future Orchards 2012 website has a number of very good papers describing intensive orchard systems.

SRD

Specific replant diseases which occur when apples follow apples, or pears follow pears on the same ground have a major impact on new orchard performance.

Dr Gordon Brown, in a study of 10 sites planted in apples in Tasmania, found an average reduction of 58.5 per cent in tree growth due to SARD with a range from 30 to 73 per cent. In another study, cumulative yield over the first seven years from planting ranged from just over 210 tonne/ha for the untreated to almost 310 t/ha in the best fumigation treatment.

Details of this work can be found in *Soil Treatments against Replant Pests and Diseases* by Dr Gordon Brown posted on the Future Orchards 2012 website in 2008.

Soil fumigation treatments are best carried out in the post-harvest period, once soil moisture is satisfactory, while soil temperatures remain satisfactory for good fumigant action. ■

Figure 4. *SARD – The row on the right has been fumigated, the row on the left not. The SARD affected trees on the left are 55 per cent smaller than those on the right.*

The Future Orchards 2012 website has a number of very good papers describing intensive orchard systems.

Deluded pests follow scent trail to eradication

By Nicole Baxter

Alternative control methods are offering hope for easier, more cost effective pest eradication. An international collaboration of researchers is trialling new biological control and management methods for horticultural insect pests to reduce costs to growers and the environment.

Leading the CRC for National Plant Biosecurity project is Bill Woods from the Department of Agriculture and Food, Western Australia. He is collaborating with researchers in Australia, New Zealand and the United States to develop effective non-chemical alternatives. Using the light-brown apple moth (LBAM) as a model species, the team is integrating control methods such as the sterile insect technique and mating disruption.

For the LBAM – a small leafroller moth that attacks grapes, citrus, pears and apples – the sterile insect technique involves exposing males to irradiation so they become infertile. After release, sterile males mate with wild females, which lay unproductive eggs. The research teams in WA and New Zealand have determined the optimal dose to sterilise male moths without preventing them from flying and scientists in the US - where the light-brown apple moth has recently established - have confirmed the results.

In nature, male moths fly along a pheromone plume (scent trail) to find and mate with virgin female moths. The technique called mating disruption interferes with this biological imperative. Conventional mating disruption uses hand-placed pheromone ties that confuse male moths, which fly to the ties rather than to females. This inhibits breeding and lowers pest pressure on high-value crops. However, Bill Woods says dispensing ties is time consuming and expensive.

"New techniques to inexpensively apply pheromone over large areas are required."

In urban areas the research team has tested a new technique – mobile mating disruption –

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Deluded pests follow scent trail to eradication

where thousands of sterile male Med. flies to which pheromone has been applied are released; deluded male moths chase the Med. flies instead of female moths.

The trials were based on earlier work by collaborators Max Suckling, from the New Zealand Institute for Plant and Food Research Ltd at Christchurch, and Eric Jang, of the US Department of Agriculture Agricultural Research Service in Hawaii.

In Perth trials, success was measured by whether the male moths could find a female moth or lure plug in a moth trap that simulated a calling female. In the pheromone-treated plots, no moths were found in traps immediately after release of the pheromone-carrying Med. fly, but there were good moth catches in untreated plots.

Bill Woods says the technique shows promise as a safe, low-cost way to eradicate light-brown apple moths in urban areas where placement of pheromone ties is difficult.

In collaboration with the South Australian Research and Development Institute's (SARDI's) Greg Baker, another innovative pheromone-application technique is being investigated, appropriately known as 'SPLAT' (specialised pheromone and lure application technology).

The product, dispensed as small blobs into vineyards or orchards, is a wax-based formulation containing a small amount of pheromone that attracts male moths and keeps them away from breeding females.

According to Greg Baker, the SPLAT treatments trialled at Orlando Wines, Langhorne Creek, SA, appear to have successfully disrupted light-brown apple mating.

"Our next experiment will help determine the most cost-effective application rate," he said.

The final phase of the research will integrate several of the novel control technologies to evaluate their ability to eradicate small populations of light-brown apple moth in urban and semi-rural areas of SA and WA.

Bill Woods says, in time, these novel pest control methods may play an important role in

defending high-value produce against attack from other devastating pest threats, such as the European grape vine moth and the false codling moth, should they enter Australia.

Contact: Cooperative Research Centre for National Plant Biosecurity;
w: www.crcplantbiosecurity.com.au;
t: (02) 6201 2882 ■

Precision irrigation reviewed

Report by Prof. Barry McGlasson, Technical Editor - Summerfruit

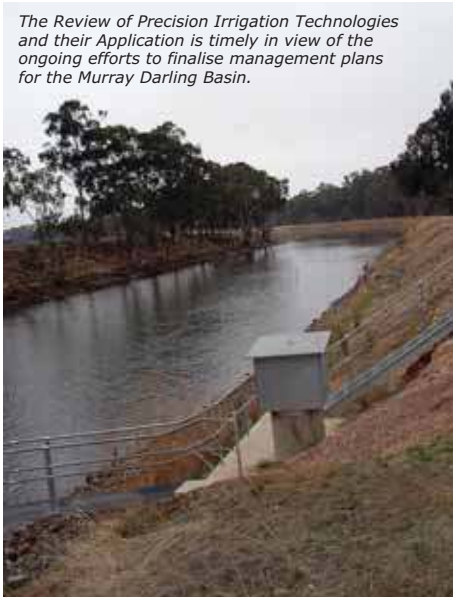
National Program for Sustainable Irrigation (www.npsi.gov.au): Comments on *Review of Precision Irrigation Technologies and their Application* (2010). Smith R.J., Baillie J.N., McCarthy A.C., Raine S.R. and Baillie C.P., National Centre for Engineering in Agriculture, Publication 1003017/1, University of Southern Queensland, Toowoomba (NPSI Publication Reference NPSI 6-10).

This review is timely in view of the ongoing efforts to finalise management plans for the Murray Darling Basin that will ultimately result in less, and probably more expensive, water being available for irrigation. The authors conceptualise what is meant by precision irrigation, what is known about its implementation, and gaps in knowledge that limit its application. As the title suggests, precision irrigation is about meeting specific requirements for each crop that will maximise yield, water use efficiency or profitability, knowing when to irrigate and how much water to apply.

The level of precision envisaged requires understanding of crop production systems and the ability to identify the interactions between the various crop inputs, productivity gains and the operating costs or constraints. The authors suggest that crop simulation models provide a framework for identifying optimal strategies and that they are an essential part of real-time decision systems for controlling irrigation application systems. In the absence of low-cost, non-invasive sensors of crop and soil responses the authors suggest that irrigators will have to rely on simulation for the foreseeable future.

This review covered a wide range of crops and irrigation systems and drew on only a few examples from perennial horticultural crops. Possible earlier research that has been done on perennial horticultural crops in Australia was under-recognised. This work included controlled deficit irrigation of summerfruit, citrus and wine grapes, and pulsed low volume under-tree trickle systems. The February issue of *Australian Fruitgrower* 2011 (Vol 5 No. 1) contained an article on the development of a precision irrigation system by Lexie McClymont and Ian Goodwin of DPI Victoria based on current research on the application of aerial imagery to measure canopy size of various perennial crops in the Sunraysia and the Goulburn Valley. Variable canopy size can lead to over-irrigation of smaller trees if irrigation rates are adjusted to meet the needs of trees with larger canopies. The addition of thermal imagery could lead to further improvements by identifying individual plants or groups of plants that are receiving too little or too much water due to variations in canopy size and soils. Micro-irrigation systems now widely used for tree crops lend themselves to precision irrigation since the irrigation water is applied in metered amounts to a limited area under the canopy. There are concerns about the accumulation of salinity particularly when irrigation with relatively high salt levels is used.

The reviewers identified several areas where more research is needed. These include the need for field trials to measure the costs/benefits of adaptive systems such as the one outlined by McClymont and Goodwin. In terms of improved tools and technology for perennial horticultural crops there is a need for low cost tools for sensing soil moisture and crop responses, and a hydraulic diagnostic model for drip irrigation systems capable of interaction with a control system to deliver spatially varied amounts of water. There is also a need for improved crop models sensitive to small variations in irrigation management with a self learning capability. ■



The Review of Precision Irrigation Technologies and their Application is timely in view of the ongoing efforts to finalise management plans for the Murray Darling Basin.

The impact of high air relative humidity, prolonged fruit wetness and tree flooding on fruit quality.

By Dr Gordon Brown and Dr Robert Holmes.

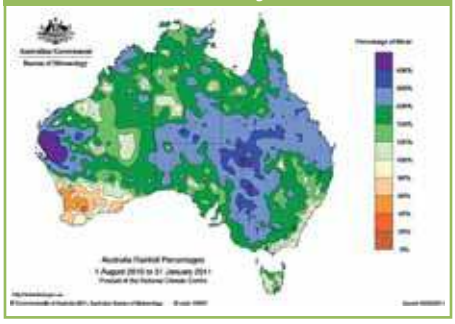
Having survived many years of dry growing conditions and insufficient irrigation water, the drought has been broken over eastern Australia and instead, growers have seen a season of wet weather and floods in many orchards with some production areas receiving greater than two times their average rainfall *(Figure 1)*.

The impact of the wet weather has been obvious with orchard diseases such as black spot (scab), where any fine weather has seen growers busy on their sprayers.

For flooded orchards, many growers would have observed *Phytophthora* fruit rot for the first time in many years. This disease appears on fruit that was submerged in water allowing for this normal soil pathogen to infect the fruit *(Figure 2)*. It is occasionally seen on low laying limbs with fruit close to the soil in rainy seasons so flooding is not a pre requisite for this fruit rot. This disease will continue to appear even on healthy looking fruit if they are stored and it will spread to fruit that are touching in the bin so it is essential not to store fruit that has gone underwater in a flood.

It also does not hurt to remember that many other fruit rot organisms also infect fruit in the field in wet seasons so it may be wise to ensure that all fruit destined for storage has had adequate spray coverage over the growing season leading up to harvest and that appropriate fungicides are used and maintained in dip tanks. For those growers who have avoided using fungicide dips in recent years due to the use of SmartFresh®, this season, fungicide dipping may be prudent on high value apple crops and essential on highly susceptible pears destined for storage.

Figure 1. *Deviation from average rainfall for Australia since August 2010.*



Effects of water logging on tree health and fruit quality

Fortunately, while we remain free of Nectria canker (also known as European canker, caused by *Neonectria ditissima*) which is present in New Zealand, North America, Chile and Europe, we will not see wide scale and extensive tree losses due to this disease. I saw a 'Gala' orchard in France in 2001 that had been flooded and there were virtually no living trees due to this disease *(Figure 3)*. Let's hope that biosecurity Australia has it right and that this disease does not become established here from imported apples.

Figure 2. *Phytophthora fruit rot. (Snowdon 1990).*

Having said this, remember that apple tree roots do not perform well in waterlogged soils and other diseases such as *Phytophthora, Rhizoctonia* and *Verticillium* wilt may be reducing root performance even in trees that appear healthy.

In 2001 I had a trial studying the impact of rootstocks on internal browning of Pink Lady™ apples. In this trial we visually recorded the tree health, harvested fruit and stored them. After storage we identified that many individual trees had extreme levels of internal browning that we could not explain so we re-visited the site.

What we found was that the trees that had given high levels of internal browning were either dead or dying due to a root disease after a wet spring, this was despite no visible signs in the previous autumn when the fruit were harvested. The diseased trees had 37 per cent of fruit with no internal browning versus 60 per cent from the trees that were healthy in the following season.

So, if you plan on storing fruit, consider sending pickers through initially to harvest fruit that has been flooded or that is growing close to the soil. The sound fruit from this harvest should be sold as quickly as possible to avoid fruit rots. But how about the fruit that is high in the trees that were not flooded? What impact has the wet weather and associated high humidity combined with unusually wet soils had on potential fruit storage life?

Let's start by looking at the roots. The most productive parts of the root system for absorption of nutrients are the young white roots and particularly the young root hairs. Any restriction to growth of these roots - such as lack of sugars from the leaves, anaerobic soils from excess water and attack from root diseases such as nematodes, *Phytophthora, Verticillium, Rhizoctonia* or white root rot - will have a negative impact on nutrient uptake from the soil.

Further, in wet soils, soil microflora and chemistry changes and some nutrients - such as calcium - become bound to organic mater and are not available for uptake. Anaerobic soils also become more acidic and this will reduce the availability of many nutrients and cause release of toxic levels of others such as aluminium. Nitrogen will be converted to ammonium and is potentially lost to the atmosphere and finally anaerobic bacteria can produce harmful compounds such as ammonium sulphides, methane, ethylene and phosphine.

This paints a picture that wet soils are hostile places for roots, and as such, their activity is dramatically reduced. This is why most fruit crops cannot tolerate growing in wet soils. Be aware that different rootstocks can tolerate wet roots to different degrees. For example M26 does not tolerate wet soils compared to M9 and MM106. This means that the tree above will have low rates of photosynthesis resulting in low quantities of sugars being produced for transport to the fruit and conversion into cellular structures such as cell walls. In addition to wet soils the soil temperatures will also be having an impact on root activity. In the August 2010 issue of *Australian Fruitgrower* I wrote an article on the impact of soil temperature on root performance and developed *Figure 4*. In this report I commented that data on soil temperatures in Australia is not freely available but that, as a guide, the soil temperature will be 4°C above the average air temperature in spring. Using the information from the APFIP sites published in the February issue 2010 of *Australian Fruitgrower* for October and November of this season, during cell division of apples and during the period of maximum calcium uptake by the fruit, it was found that while Manjimup, Stanthorpe and the Goulburn Valley were at the lower end of optimal soil temperatures, the other regions were sub-optimal for nutrient uptake (see *Figure 3* caption).

If these temperatures were combined with wet soils then it can be assumed that the roots were not optimally absorbing calcium or potassium during this important period.

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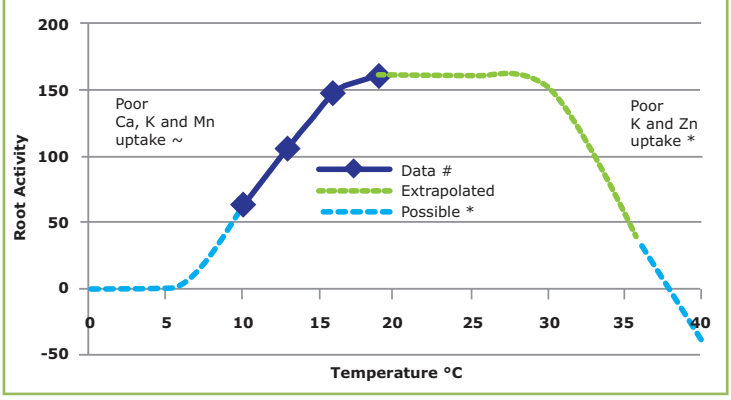
Figure 3. *Nectria canker on stem of 'Gala' trees after orchard flooding. This diseased caused the death of this orchard in France in 2001.*

Figure 4. *Average soil temperatures in Australian apple growing regions in October and November 2010, estimated from average air temperatures, Batlow 16°C, Huon 14°C, Lenswood 16°C, Manjimup 19°C, Goulburn Valley 19°C, Yarra Valley 17°C, Orange 16°C, Stanthorpe 18°C.*



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The impact of high air relative humidity, prolonged fruit wetness and tree flooding on fruit quality.

The sub-optimal soil temperatures, the high levels of soil moisture, combined with high relative humidity of the air will mean that fruit will potentially size well but will potentially have poor cellular structure increasing the risk of financial loss if the fruit are stored.
A crude guide to indicate this problem would be low levels of fruit sugar (TSS) at harvest.
A better indicator is dry weight of the flesh or better still the levels of Alcohol Insoluble Solids (AIS) which is a direct measure of the quantity of cell wall material. Although I am not aware of any levels ever being set, as a guide dry weights should be greater than 15 per cent and AIS greater than two per cent of the fresh weight for fruit destined for storage. If all lines of fruit are measured this will give you an indicator of which lines need clearing first.

To crudely measure dry weight:

- Take 20 apples from across the harvest, core them, slice them, place them on baking paper and accurately weigh them. A plate could be used instead of baking paper but it will be necessary to measure the dry weight of the plate so an accurate measurement of the fruit weight can be calculated.
- After this, place them in an oven set between 50 and 80°C for a couple of days, until the weight becomes stable (higher temperatures will burn the sugar and give a false reading). For the oven I have used a small lunch room bench top oven and turn the thermostat till I hear the click indicating the element has turned on, this is usually about 50°C; turn the dial a fraction more and leave the door a slightly open to allow for ventilation to remove the moisture released from the fruit. Once the operating temperature is confirmed the fruit can be placed in the oven.
- After they are dry accurately re-weigh them on the baking paper or plate as it could be difficult to remove them from the drying surface and calculate the percentage dry weight. For accurate results make sure that you have at least three numbers on the scales you use for the dry weight measurement. In other words if your scales can read down to one gram (1gm) you need at least 100gm of dried material which will come from about 700gm of fresh fruit slices (for scales that read to 0.1gm you need at least 70gm of fresh slices and so on).

Influence of humidity and waterlogging on calcium uptake

Finally, a mineral of particular concern is calcium. Calcium is not particularly available in wet or cold soils, and further, its uptake is driven by transpiration of water from the leaves. In humid conditions transpiration is reduced and calcium uptake is low.

In 2010 I treated potted 'Fuji' apple trees to eliminate viruses. This involved growing the trees in a cabinet at 39°C for 60 days at 95% relative humidity. In these conditions little transpiration occurred and calcium deficiency symptoms of the foliage and growing tip rapidly appeared *(Figure 5)*. In this extreme case the problem was solved by the installation of fans to increase air movement through the foliage thereby increasing transpiration rate.

Figure 5. *Severe calcium deficiency symptoms of apple shoots growing in high humidity with little transpiration.*

Figure 6. *Dipping or drenching bins of apples in fungicide and calcium to improve fruit storage potential.*

This shows just how sensitive apple trees are to calcium deficiency in humid environments. It also demonstrates that this issue is not as severe where winds blow through orchards. Hence, orchards growing in cold, wet soils and humid conditions where wind movement is restricted due to windbreaks or hail netting will have a greater potential for calcium deficiency. Of course growers are all aware that a lack of calcium in apple fruit leads to poor cellular integrity leading to bitter pit and poor fruit storage. Hence, in orchards where calcium is likely to have been in short supply due to high humidity and lack of winds and especially in orchards where this is combined with a history of bitter pit problems, ensure that calcium sprays are applied to trees and consider the use of calcium postharvest dips *(Figure 6)*.

While it has been difficult finding information to put the above article together, don't despair, you are not alone. Have a look at www.youtube.com/watch?v=dVBoG6VyjRQ and see that Poland lost eight per cent of its crop to flooding last year and the problems Polish growers are having with selling apple juice at a profitable price.

And of course Chile has not been without its problems. The following was found at www.freshfruitportal.com/2010/11/05/chile%E2%80%99s-apple-pear-grape-exports-for-2011-depend-on-weather-exchange-rate-usda-says/.

Figure 7. *Target rot caused by Neofabraea alba.*

"Erratic weather and unfavorable exchange rates make export estimates difficult for Chile's apples, table grapes and pears, according to a US Department of Agriculture (USDA) overview of the industry. Apple production is expected to drop slightly in 2011 compared with 2010, due to an exceptionally cold winter (June through August 2010) that brought damaging frost, said the report (dated October 28). Chile exported 790,000 tonnes of apples so far in 2010.

The report noted that a stronger Chilean peso relative to the US dollar, along with higher labor costs, make it unlikely that there will be more investment in apples. As a result, production is not expected to rise significantly in the near future. Growers continue the trend of replacing 'Red Delicious' with higher yielding varieties such as 'Braeburn' and Pink Lady. Variable weather makes it difficult to predict production for pears, according to the USDA. The cold winter provided enough cold hours, but frost will likely reduce output. Chile exported 115,056 tonnes of pears last season."

Managing postharvest rots in a wet harvest season

The current HAL funded project 'Through Chain Rot Management in Apples' has provided some insights into the success of rot control practices in a wet harvest season. During the 2007 Pink Lady and Sundowner™ harvest, orchards in the Adelaide Hills experienced frequent and prolonged wet periods. An analysis by Paul James of PIRSA comparing management practices and harvest weather conditions associated with good and poor rot control helped to identify the risks, In that wet harvest season most rots were associated with the fungal pathogens *Neofabraea alba (Figure 7), Neofabraea perennans (Figure 8)* the causes of Target rots and *Penicillium spp*. (Blue mould *Figure 9)*.

Neofabraea spp are tree canker pathogens which infect fruit in the field, are dispersed by rain and fruit is most susceptible when rain occurs over the harvest period. Penicillium, on the other hand, most commonly infects fruit during and after harvest through handling injuries such as stem punctures and scratches.

TABLE 1: THE MAJOR ROT HAZARDS, BEFORE DURING AND AFTER HARVEST AND THE APPROPRIATE CONTROLS.

HAZARD	CONTROL STEP
Preharvest	
Inoculum carryover	Maintain hygienic orchard environment – Remove cankers on tree limbs. Mulch dropped fruit and twigs or remove from orchard.
Fruit infections – Neofabraea, Botrytis and other fungi	Maintain a protectant spray program ensuring final spray close to harvest. Apply curative fungicides following risk periods (eg sustained leaf wetness period more than 2-3 weeks after the last protectant spray)
Fruit infections – Mucor and other fungi	Discard fruit which have contacted the soil or grass. Train trees and manage grass to avoid fruit contact.
Wounding - Punctures and scratches	Control chewing insects eg Codling moth and LBAM
Wounding - Punctures and scratches	Prevent bird attack.
Wounding - Punctures and scratches	Ensure bins are smooth, without protrusions and free from debris.
Bins are contaminated with rot fungi	Clean bins to remove all signs of fruit residue and other debris. Disinfect bins.
Harvest	
Bins become contaminated with rot fungi	Keep bins off wet ground (using trailers, or placing on wood shavings etc.).
Bins and drench become contaminated with rot fungi	Prevent machinery carrying orchard soil onto unloading apron and handling areas.
Fruit are contaminated by rot fungi	Reject fallen fruit and fruit with obvious rot (eg bird damaged fruit).
Fruit are contaminated by rot fungi	Do not pick fruit which is wet.
Fruit overly turgid and easily damaged	Do not pick fruit which is wet.
Wounding – Punctures and scratches	Train pickers.
Wounding – Punctures and scratches	Train tractor drivers, grade tracks, use low trailer tyre pressure.
Postharvest	
Wounding – Punctures and scratches	Minimise the number of handling steps eg number of times bins are lifted and placed down
Drenching	
Fruit are contaminated by rot fungi	Rinse fruit in sanitised water prior to drenching
Fruit are contaminated by rot fungi	Follow industry code of practice for postharvest drenching (see APAL website). Replace drench frequently – according to label directions.
Postharvest fungicides ineffective	Strictly follow label directions eg. Rate and timing (within specified period after harvest).
Postharvest fungicides ineffective	Follow label directions for the prevention and management of fungicide resistance.
Touch burn on fruit susceptible to rots	Allow fruit to drain after drenching.

Figure 8. *Target rot caused by Neofabraea perennans.*

Figure 9. *Blue mould rot caused by Penicillium sp.*

Continued over...

Continued...

The impact of high air relative humidity, prolonged fruit wetness and tree flooding on fruit quality.

In that study, rots were most severe:

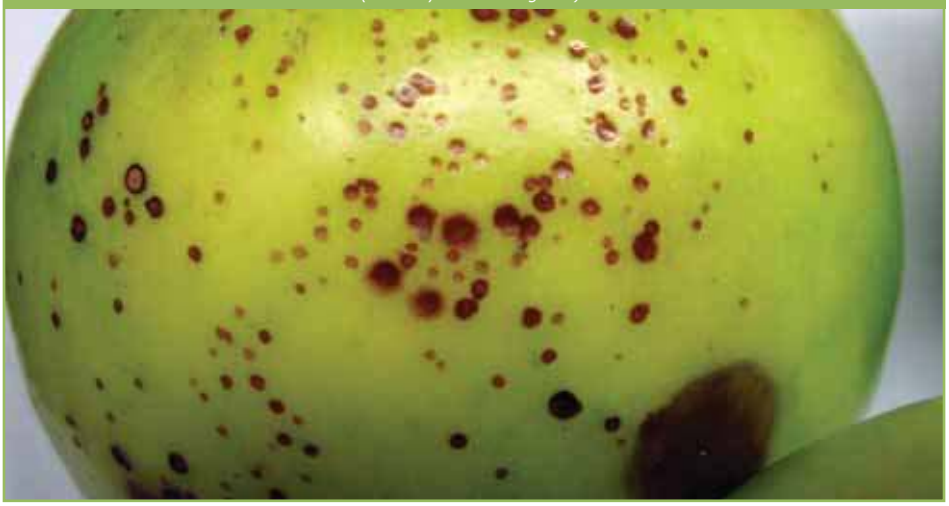
1. in fruit harvested wet, particularly during or within a day after sustained rain;
2. in fruit which did not receive an effective fungicide within the three weeks before harvest;
3. in fruit which were not drenched after harvest in a benzimidazole fungicide (Note the benzimidazole fungicide thiabendazole is currently available for postharvest application, as the product Vorlon®. Residue of this fungicide is not permitted in some export markets. If export is intended, please check the regulations of the destination market).

In addition, some producers have shown an improvement in rot control by applying stricter hygiene practices in the field and storage facility, which limit contamination of the fruit by pathogenic fungi such as *Penicillium*.
These three factors and less attention to hygiene were identified to be the main contributors to rot risk, with the most severe rot levels occurring when all these conditions occurred.

In the following season, 'Granny Smith' and 'Fuji' from the Granite Belt harvested following a wet preharvest period developed a high incidence of Bitter rot caused by *Glomerella cingulata (Figure 10)*, and a unique lenticel spotting during storage *(Figure 11)* associated with a *Phoma*-like fungus and possibly *Alternaria*. Bitter rot and Alternaria are known to be favoured by wet, humid and warm conditions and are more common where lenticels become enlarged and highly susceptible to infection following rain. Lessons learned in these two diverse climatic zones provide valuable reminders for this current harvest in the eastern states at least, where several growing regions have experienced

Figure 10. *Bitter rot on Granny Smith.*

Figure 11. *Lenticel spot on Granny Smith associated with a Phoma-like fungus and possibly Alternaria. (Photo Lynette Haselgrove).*



unprecedented wet conditions prior to harvest and there is a strong probability of a wet harvest. There are many risk factors contributing to rots and the more significant are given in *Table 1*. Pear growers are also reminded that *Mucor (Figure 12)*, which has not been a significant problem in recent years, could be more damaging this season. *Mucor* is a soil-borne fungus which can be introduced into harvested fruit if fruit have contacted the ground and if orchard soil is allowed to contaminate fruit in the handling process. The control steps to avoid Mucor contamination are given in *Table 1*.

For further information on drenching practices to minimise postharvest rots see the guidelines published by APAL *(http://www.apal.org.au/assets/content/3213/DPA%20use%20guidelines%20Revised%20April07.pdf)*. For further information on the control of Alternaria fruit spot and Bitter rot of apples refer to The Orchard plant protection guide for deciduous fruit in NSW 2010 -11 *www.dpi.nsw.gov.au/pubs/orchard-guide*

Figure 12. *Mucor rot of Bosc pear (photo Ramez Aldaoud).*

Conclusions

If orchards have been growing in cold, wet or waterlogged soils in a high relative humidity with poor air movement then expect the fruit to have a poor storage potential. Consider the following actions to maximise storage success.

1) Send pickers through first to harvest fruit that has been submerged in flood water or that is growing close to the ground. Any sound fruit that has good flavour should be marketed quickly from this harvest as it will be prone to rapid decay.
2) For fruit higher in the trees measure their sugar (TSS), dry matter and/or alcohol insoluble solids. Low levels of these measurements will indicate fruit with poor storage potential. This information can be used when deciding which fruit to market first.
3) This may be the season when postharvest fungicides are particularly beneficial even if SmartFresh is being used. A wet harvest increases rot risk in many ways so consider all the hazards and controls in table 1 and refer to the checklist in the drenching guide published by APAL.
4) Ensure that field calcium sprays have been maintained and ensure that fruit from blocks with a high risk of bitter pit have sufficient calcium for storage. It may be prudent to consider the use of postharvest calcium dips to provide some insurance against bitter pit and fruit breakdown during storage. ■

QA – what does it really cost?

Ask a primary producer about Quality Assurance (QA) and food safety and the most common response is to do with how much it costs and the need tosystems to meet the needs of different customers. But how much does it really cost?

TQA Australia has been working with producers to implement QA systems for over a decade and has decided to get to the bottom of this question. The not-for-profit organisation is conducting a national survey to determine the cost of QA and food safety compliance for the Australian horticultural industry. The project is funded by TQA Australia, assisted by HAL. Jane Lovell, Managing Director expressed growing concern that the cost of complying with multiple standards is disproportional to the benefit. However the actual costs involved in implementation, maintenance and audit of quality assurance and food systems hasn't been quantified.

"We think its about time this happened so we can deal with the facts and so put our money where our mouth is and helped fund this project ourselves."

The survey was launched late last year and yet it Ms Lovell is concerned that, for all the complaints aired about the cost of running QA systems, the time it takes, the cost of audit fees, water and microbiological testing etc, when horticultural producers are given an opportunity to provide information about the real costs of QA "the response rate is underwhelming".

Of the many thousands of horticultural producers in Australia, after three months just over 50 have completed the "Cost of Compliance" survey (www.tqainc.com.au/survey.html) to date.

Meaningful data cannot be generated from such a small sample. Each individual has to make their own decision on how much time to spend on QA, but how can the industry have a discussion about costs if we don't have a handle on the facts? Ms Lovell asked.

All businesses growing and packing horticultural produce are invited to complete the survey which would like to find out, for instance, is the cost of compliance fairly uniform or does it cost more for some crops? Are there any differences between states?

"The more people participate the more confidence we will have in the results," she said. The survey can be completed online (at www.tqainc.com.au/survey.html) or a hard copy can be provided to fill in t: 1300 952 221; e: jane.lovell@tquinc.com.au; m: 0419 554 047 ■

International apple and pear research update

Compiled by Dr Gordon Brown, Technical Editor – Apple and Pear

Nurseries and Cultivars

Portugal

A study of commercial apple cultivars and regional apple cultivars found that the regional cultivars, Bravo de Esmolfe and Camoesa de Alcongosta, were preferred by consumers and had higher levels of fibre and polyphenolics compared to normal commercial cultivars.

Turkey

In a nursery trial with three apple cultivars a spray of GA4+7+6BA after or without tip pinching on one year old trees had no impact on branch angles or branch lengths.

Tunisia

A method of using auxiliary buds of apple plants in tissue culture has been developed that has high multiplication rates and excellent plantlet survival with planting into soil.

Production

Russia

Working with new Russian pear varieties yields of up to 35 tonnes/hectare have been achieved at 666 trees/ha or up to 37.5 t/ha at 1666 trees/ha.

Italy

A cost benefit analysis of hail insurance versus anti hail netting in northern Italian apple orchards was conducted and then field tested to determine the break even point between the two hail protection systems.

Poland

In a study of pollen growth of six cultivars of pear it was found that all were self-incompatible and that several cultivars were not cross compatible.

Spain

In studies of bitter pit development in storage of Reinette du Canada apples it was found that summer pruning reduced bitter pit and increased fruit colour, firmness, sugars and acidity.

Germany

After nine years of comparing an organic apple orchard with an integrated apple orchard it was found that codling moth, fruit with damaged skin and storage rots were a problem in the organic orchard. Both systems had problems with fire blight. It was concluded that different varietal mixes are needed for organic apple production.

Italy

M9 rootstocks are commonly used in northern Italy to maintain small trees in high density orchards, however, this rootstock is often not sufficiently dwarfing. It has been found that increasing the grafting height of the tree on the rootstock is an alternative to new rootstock cultivars being developed to increase the dwarfing character of M9 rootstocks.

Brazil

Dormex® is regularly used to improve and compact bud break in apples but its use is hazardous to the applicator and the environment. Research has shown that an alternative material, Erger plus calcium nitrate, is as effective as Dormex but is safer on the user and environment.

Argentina

A study of 6BA (benzyladenine) application to Williams pears in Argentina (150mg/L) and Oregon (125mg/L) at various days up to 28 days after petal fall found that optimum thinning occurred at 4 to 16 days after petal fall in Argentina but there was no thinning in Oregon, at the lower application rate, although fruit from the 10 to 18 days after petal fall application were larger at harvest.

Netherlands

The increasing difference in the market value of small and large Conference pears and the high labour costs for hand thinning, makes chemical thinning an attractive proposition. In trials it was found that ATS at effective rates increased russet and that a tank mix of NAA and 6BA, although effectively thinning pears over 6BA alone, did not increase fruit size, and in some instances decreased fruit size, due to the NAA in the mix.

Brazil

In a study of bud break materials on European pears in a region with warm winters it was found that both Dormex® and potassium nitrate (10%) applied with mineral oil were effective although Dormex at 0.7%+mineral oil 3% was the optimal treatment.

USA

Ethrel and NAA are ineffective at thinning apples in Washington state so materials to control biennial bearing are needed. While GA7 was found to be extremely effective, further trials used GA3 as it is approved for use by the organic movement in the USA. GA3 was applied to 10mm fruitlets and while results were inconsistent, they demonstrated a 20-40% reduction in floral density in the following season in half of the trials.

USA

Using potted apple trees subjected to different temperatures for 10 days prior to chemical thinners and then to different temperatures for 5 days after chemical thinners (NAA, carbaryl or 6BA). Fruit set was more affected by temperature after application than prior to application with high (29/22.5°C) temperatures after thinner application leading to greater thinning efficiency for all materials.

Belgium

With the removal of carbaryl in Europe as a thinning agent there is a need to find an alternative chemical thinner and studies have begun on the efficacy of the new fruit thinning compounds 6-BA and metamitron on the new cultivars of apples such as Rubens, Junami, Wellant, Kanzi, Greenstar and Zari which have been extensively planted in Europe.

Brazil

In a study of growth regulators in a climate of poor winter chilling it has been identified that Regalis® and thidiazuron (TDZ) are effective at increasing yield when there is lack of pollination.

Australia

In trials studying alternative fruit thinning materials in apples lime sulphur reduced crop load in Gala apples by 40%, a combination of fish emulsion and fish oil reduced crop load by 70%, but resulted in fruit russet. Ecocarb (potassium bicarbonate) resulted in similar thinning levels to ammonium thiosulphate, reducing crop load of Jonagold by 50% when applied as a 2% solution and over thinning occurred at higher concentrations. Sodium chloride (salt) at 2 or 5% resulted in over-thinning. Neither Ecocarb nor sodium chloride caused any fruit russeting

USA

In studies on crop load needed to ensure return bloom of Honeycrisp apples it was found that a relatively low crop load (4 fruits/cm2 trunk cross-sectional area (TCA)) was required to ensure a strong return bloom the next year for three year old trees but with five year old trees crop loads of 6 fruits/cm2 TCA gave good return bloom.

USA

In developing a model for predicting ultimate fruit set in the seven days after thinner application it was found that application of thinners at petal fall reduced the efficacy of post bloom thinners such as 6BA.

Japan

A study of flower bud formation in apples found that buds with high levels of ketol octadecadienoic acid (KODA) developed plentiful flowers while the reverse was true for gibberellic acid. It was then found that application of KODA during flower bud initiation increased the number of flowers.

USA

In a study of pre harvest fruit drop chemical treatments it has been found that the efficacy of Retain® can be improved if 20mg/L NAA is added to the spray tank and that this treatment provided similar drop control to treatment with sprayable 1-methycyclopropene (Harvista®).

Postharvest, handling and processing

Italy
Benzyladenine (BA) is a well known synthetic cytokinin used for thinning apples and it has been shown that this material induces ethylene production within the tree within 24 hours of application and that the effect on fruit abscission can be reversed with the application of Retain.

Poland
In a series of experiments to stop pre-harvest fruit drop it was found that TOPS® (TPA - 3,5,6-trichloro-2-pyridil-oxyacetic acid) reduced fruit drop to a similar degree to NAA and that it improved the red colour of apples and their quality after storage.

Germany
As the number of fruit thinning materials available to growers is diminishing alternatives need to be found. In trials it has been found that spraying trees with a water soluble food colourant E151 reduced fruit set by 28% in Kanzi and 7.6% in Cameo® and it was found that this was caused by reduced auxin flow due to limited carbohydrate availability rather than by the formation of ethylene.

USA
In a study on cloudy weather impacts on apple thinning trees were shaded with 80% cloth both prior to and after thinning chemicals were applied. Shading prior to chemical thinning had little effect while trees were de-fruited with post thinner application of shade.

Australia
In a study of fruit thinning ethephon was applied alone or in combination with an organosilicone surfactant – Silwet® - which was also applied alone. In Jonagold ethephon alone had no effect while the Silwet alone removed half the fruit and the combination of the two materials removed nearly all the fruit. In Fuji the crop load was reduced by over 85% in both the Silwet alone and the ethephon plus Silwet treatments.

Poland
In an attempt to identify a fruit thinning agent for apples that is acceptable for organic production several materials were tested. Rape oil reduced fruit set but increased fruit russet. NuFilm 96, Biochicol (chitosan), garlic soap and Bioczos had no effect on fruit set.

Poland
In a trial of Gala apples on M9 rootstocks it was found that fertigation increased the growth and yield of apple trees compared to broadcasting the same quantity of fertilizer to the soil surface.

Italy
In a study of the mode of action of 6BA as an apple thinning agent it has been found that BA treatment establishes a nutritional stress within the tree.

Spain
Fuji Kiku-8 apples, harvested at commercial maturity and dipped in calcium chloride (2% w/v) and stored at 1°C and 92% RH for 4 or 7 months under air plus 7 days at 20°C. Calcium dipping increased fruit aroma especially for the short storage duration and consumer acceptance was higher for the calcium-treated fruit.

New Zealand
The application of SmartFresh can result in an unsightly darkening of the russeted area in the stem cavity of Cox's Orange Pippin apples and in storage trials it has been found that this problem can be reduced if fruit undergo SmartFresh within 3 days of harvest, after cooling, at a reduced rate of SmartFresh and if they are not warmed for packing especially in the first 2 weeks after SmartFresh.

USA
Apple fruit stored at high concentrations of CO_2 (5%) develop external CO_2 injury and at the same time there is an increase in γ-aminobutyric acid (GABA) suggesting that GABA accumulations may be related to postharvest stresses in fruit.

Iraq
Golden Delicious and Red Delicious apple fruits were dipped in ReTain® and then stored. After six months dipped fruit had maintained firmness and acidity, and the incidence of superficial scald was lower than that of untreated fruits.

Iran
In a study of several cultivars of apple it has been found that cultivars with elevated levels of pectin are high acid cultivars due to the fact that pectin biosynthesis is positively correlated with lower pH of cell sap.

Germany
Two CA rooms filled on the same day with the same lines of Gala apples were compared. One room had SmartFresh application and was maintained at 4°C while the other room was a conventional CA room at 1.5°C. After 5.5 months of storage the energy balance for the two rooms was calculated using the cooling equipment and CO2 absorber run time records and it was found that there was 35% less energy use for the warmer temperature room and that a consumer panel preferred those fruit.

Spain
Williams Bon Chrétien, Beurre Bosc and Doyenne du Comice pears were harvested and stored in air or CA and their chlorophyll fluorescence measured over time. The results indicate that fluorimetry may be a useful technique to detect stress in pear and to predict internal disorder occurrence.

Israel
Diffuse skin browning (DSB) is a peel damage induced by SmartFresh on Golden Delicious apples after cold storage. Research studying the impact of applying SmartFresh at 1, 10, 15 or 20 days after harvest has shown that DSB developed only on apples treated with SmartFresh in the one day after harvest treatment and that DSB was not a problem in the treatments where there was a delay between harvest and SmartFresh application.

Pests and diseases

Turkey
In a trial concerned with spray coverage for black spot sprays it was found that airblast sprayers outperform conventional sprayers without air assistance.

Poland
In a replanted apple orchard soils with three levels of irrigation and three levels of fertilizer were studied and it was found that bacteria were increased in the irrigated low fertilizer soil and fungi were increased in the dry, high fertilizer soil.

Germany
The results of a study commenced in 2003 have found that apple and pear trees trained to the spindle system appear to have superior recovery from fire blight infections.

Poland
In a study of three apple cultivars growing in conventional or organic orchards it was found that apples for two of the cultivars in the organic systems had higher levels of phenolic compounds and ascorbic acid. The levels were lower in the organic system for the third cultivar studied.

Romania
In an attempt to obtain resistance to black spot and powdery mildew apples were crossed with ornamental apple species. It was found that crosses with *Malus coronaria* inferred resistance to these diseases while trees from crosses with other ornamental species were not as disease resistant.

More retail buyers, producers to boost Fresh Connections 2011

The Fresh Connections 2011 conference and trade show will advance the trans-Tasman theme of 'bringing the industry together' when it convenes in Brisbane on 8-10 June, with a strong presence of retail buyers and producers expected to attract a record crowd.

PMA Australia-New Zealand (PMA A-NZ) and the Australian Fresh Fruit Company (AFFCO) - the successful collaboration behind Fresh Event 2010 - will partner in 2011 with the Australian Chamber of Fruit & Vegetable Industries to co-host the three-day event.

With more than 80 exhibitors and up to 1000 delegates expected to attend from across the entire fruit, vegetable and floral supply chain in Australia, New Zealand and Asia, Fresh Connections 2011 will be the industry's largest networking, education and information event in the region.

"We had such positive feedback to the event we held in Melbourne in June 2010 that we want to take it up another notch in Brisbane and set even higher benchmarks" said Michael Worthington, CEO of PMA A-NZ. Of particular note this year is the increased focus on having more fresh produce on display in the exhibit hall, and a greater presence of growers and retail buyers networking under the one roof.

"This year we have a number of initiatives to have more producers exhibiting their products and more buyers from the retail sector" said Andrew Dick, of AFFCO. "We have put together attractive exhibitor packages perfectly suited to organisations and companies from Australian and New Zealand leading fruit and vegetable producing regions and all the commodity groups" he said.

Fresh Connections organisers are also working with local, national and international retailers, both large and small, for them to bring their buying teams and main decision-makers to meet with these exhibitors. "What we want are more buyers and sellers of fresh produce to create an even bigger and more diverse trade show - a real marketplace" said Mr Worthington.

The Fresh Connections 2011 conference program will highlight the latest consumer trends, insights from retailers, the importance of foodservice to the fresh produce industry and new potential market opportunities, amongst many other topics. Tours to the wholesale markets, leading Brisbane retailers and some of the most innovative growers in the area are also planned.

"One of the major benefits of Fresh Connections is the ability to see all your business contacts in a couple of days," said Shane Schnitzler, Chair of The Australian Chamber. It truly is the premier event for keeping up with global trends and for networking with the entire fresh produce supply chain - not only for senior management, but for anyone working in the fresh produce industry" said Mr. Worthington.

More information:
w: www.freshconnections2011.com.au;
AFFCO t: (03) 5420 7444 ■

Irrigation firm saves industry millions

Nelson Irrigation Australia is using experience to lead the charge against poorly designed and inefficient irrigation systems and saving valuable resources in the process. Every year the company is saving millions of dollars for irrigators across Australia through complimentary individual consultation with farmers and irrigators, in conjunction with professional irrigation dealers.

The supplier of agricultural, landscape and dust suppression irrigation equipment prides itself on not just suppling equipment, but providing expert advice and service. All Nelson area managers have over 20 years experience in irrigation industry and are committed to working with local irrigators and dealers to ensure every irrigation job is optimised for water and energy conservation and potential returns per megalitre.

Sean Hughes is one such Area Manager who is a firm believer in the value of this holistic approach. Sean is a 25 year veteran of the Australian irrigation industry and has been working with Nelson to ensure farmers, irrigators and dealers around Queensland and the Northern Territory are getting the most out of their irrigation set up for the past 11 years. Sean spoke of his passion for helping irrigators optimise irrigation performance.

"Recently – along with a dealer - I visited a grower to recommend solutions for expanding his system for new crop areas. Every property is different, from the topography through to soil texture and structure, water supply and existing irrigation facilities. Optimising an irrigation system is an exact science with many factors to be considered, but if you take the time to get it right, the financial rewards can be significant for owners. We spent two to three hours looking over their solid set irrigation system, and I took the details back to the office in Brisbane and had our technicians run uniformity and hydraulic simulations using our proprietary analysis software. This provided the basis of recommendations for adjustments to pipe arrangements, system configurations and product solutions that would be appropriate. The result is significantly increased irrigation efficiency and distribution uniformity meaning healthy crops from more sustainable water and energy inputs. In this case it was a matter of optimising the existing system with minimal financial investment and designing an extension to the system for the new paddock," said Sean.

"Using our experience to provide case-by-case service is the Nelson difference. The products we bring to market are technically advanced so it is very important that we make our experience available to ensure they're configured correctly for optimal results," said Sean. Working in partnership with local irrigation dealers to provide user education on irrigation challenges and new technology is a key part of Sean's role in the community.

"It is imperative that we work with local irrigation dealers in each region to educate irrigators on the key challenges facing their area. Partnering with the dealer enables us to recognise the history of the job and provide valuable information on the issues in that region," said Sean. Contact: t: 1300 856 368 w: www.nelsonirrigation.com.au. ■

Industry information & horticulture quiz APFIP Weather Station Roundup

Weather Station – Region Report period: 12/11/2010 to 31/12/2010	Average Temp Min	Average Temp Max	Rainfall for Month	Rainfall to Date 1st Jan
Batlow NSW	10.3	21.5	384	1855
Huon TAS	6.8	19	40.9	494.1
Lenswood SA	9.3	21.3	78.2	762.8
Manjimup WA	10.3	21.9	13.8	356.1
Goulburn VIC	12.6	25.8	130.7	716.9
Yarra Valley VIC	11.4	24.3	199.6	883.5
Orange NSW	11.5	21	405.9	1377.6
Stanthorpe QLD	12.6	20.1	244.6	823.1

This data is from the APFIP evaluation sites and may not be representative of the total district. Further weather reports and comprehensive variety evaluation reports can be found at the APFIP Australia website: www.apfip.com

HAL
Know-how for Horticulture™

This project was facilitated by HAL in partnership with Apple & Pear Australia Limited and is funded by the apple and pear levy. The Australian Government provides matching funding for HAL's R&D activities.

Greg's Quiz

Question 1:
True or False: HOOCCH$_2$C(OH)(COOH)CH2CO OH is better known as citric acid.

Question 2:
In which country do these apple varieties have their origin; Elstar, Karmijn, Muskat Reinette and Summer Spice?
A: USA. **B:** Switzerland. **C:** Belgium. **D:** Holland.

Question 3:
What is the registered tradename of the chemical kresoxim-methyl?
A: Chorus™. **B:** Vision™. **C:** Stroby™. **D:** Fulasin™.

Question 4:
The Encasia wasp is a parasite of which insect group?
A: Aphids. **B:** Whiteflys. **C:** Scale. **D:** Moths.

Question 5:
Which of these affects is not characterised in vertically-growing shoots of a fruit tree? **A:** High endogenous auxin levels.
B: Low carbohydrate levels. **C:** Low nitrogen levels.
D: Late-season growth.

Quiz supplied by Greg Cramond, SA

Answers:
Question 1 - Answer: True.
Question 2 - Answer: D: Holland
Question 3 - Answer: C: Stroby.
Question 4 - Answer: B: Whiteflys.
Question 5 - Answer: C: Low nitrogen levels (upright shoots have higher concentration of nitrogen than other areas of the plant).

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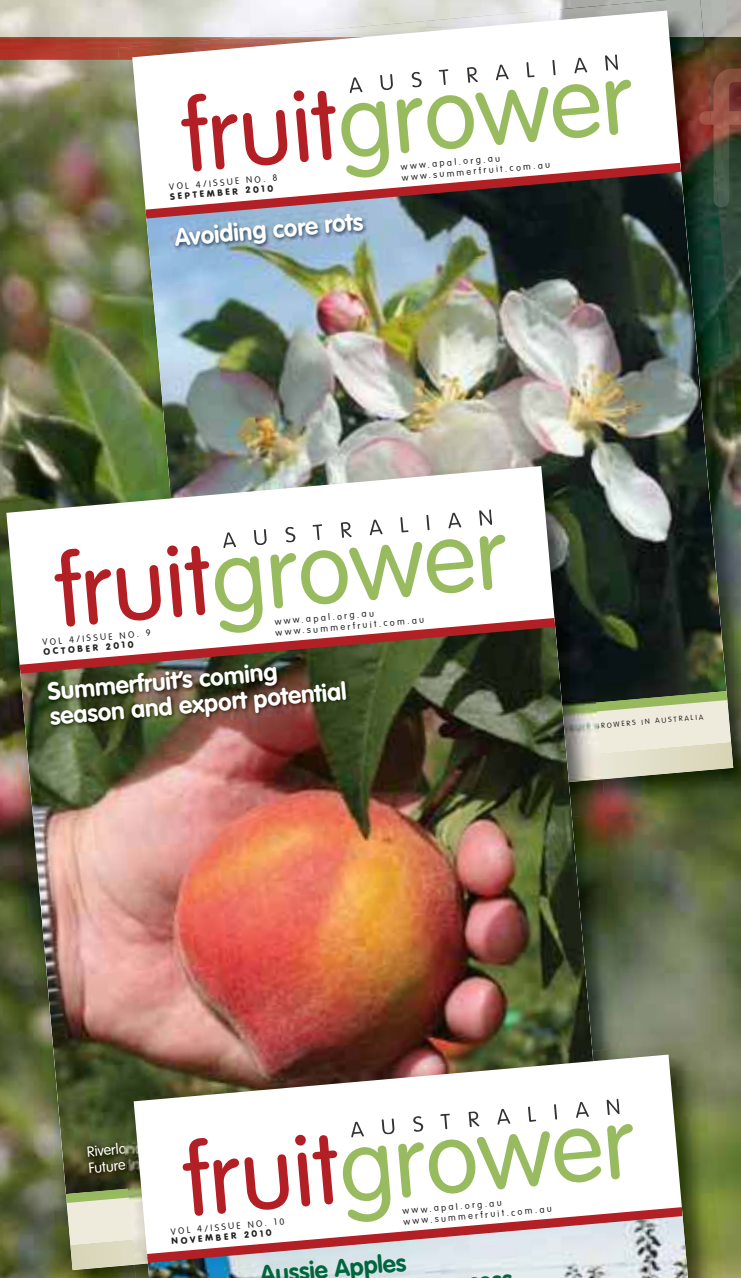

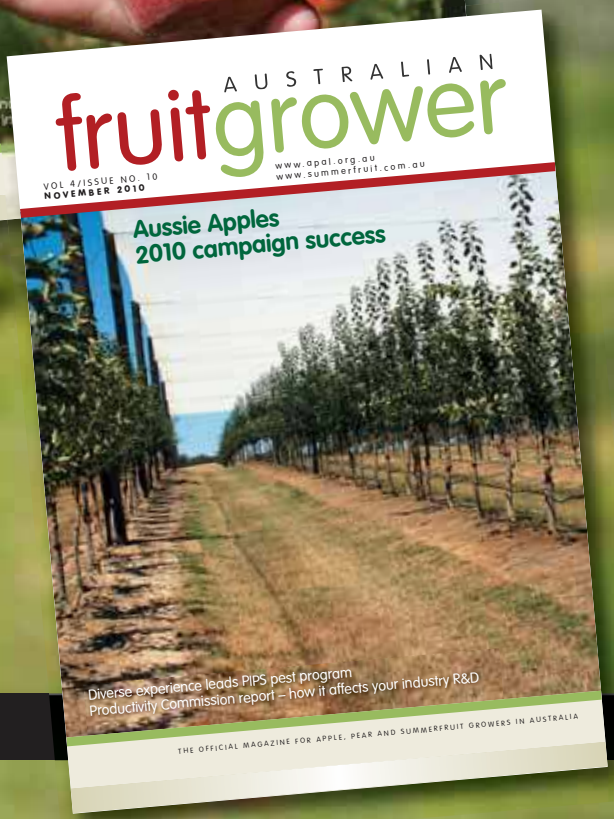

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